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Rome transitions intelligent agents software

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ROME, N.Y. — Final demonstrations of Autonomous Negotiating Teams (ANTs) software were conducted June 3 in Arlington, Va. The Air Force Research Laboratory is the lead technical agent for the Defense Advanced Research Project Agency (DARPA) ANTs program. The demonstration highlighted improved warfighter capabilities in the areas of flight and maintenance scheduling.

Intelligent software agents are the core technology used by the scheduling components. Negotiation techniques allow the agents to coordinate between the operations and maintenance systems for optimized solutions. Software agents have their own internal problem-solving abilities, which allow them to continuously collect specific information and determine when new information must be obtained to remain current in support of decision-makers. Agent technology has the potential to assist users with informational changes and uncertainty associated with strategy and tactic for battlefield command and control, as well as peacetime crisis management situations.

The objective of the ANTs program is to provide technology that enables the development of information systems that autonomously negotiate the allocation of resources to tasks in real-time, distributed systems.

"ANTs scheduling tools were used by several squadrons of Harrier AV-8Bs during Operation Iraqi Freedom," said Daniel E. Daskiewich, program manager in the directorate's Information Technology Division. "The tools provided a 30 percent increase in aircraft availability over similar squadrons that did not have the tool."

A Technology Transfer Agreement (TTA) has been signed to provide the ANTs scheduling software to the Joint Strike Fighter program - through the prime contractor, Lockheed Martin.

The Navy is funding the ANTs contractors to expand the tools to additional aircraft types, through their Future Naval Capabilities program. The scheduling tools are currently in use at Marine Air Group (MAG) 13, and will potentially be fielded for the entire Marine Corp, pending Marine Air Board approval. MAG-41 is scheduled to receive the tools next.

ANTs scheduling algorithms are being used within the AFRL Integrated Flight Management ATD on Air Mobility Command scheduling problems. The technology is also being integrated with the AFRL Human Effectiveness Directorate's Logistics Control and Information Support (LOCIS) ATD, where an initial prototype will solve C-130 maintenance scheduling problems at Air Force Special Operations Command (AFSOC). @